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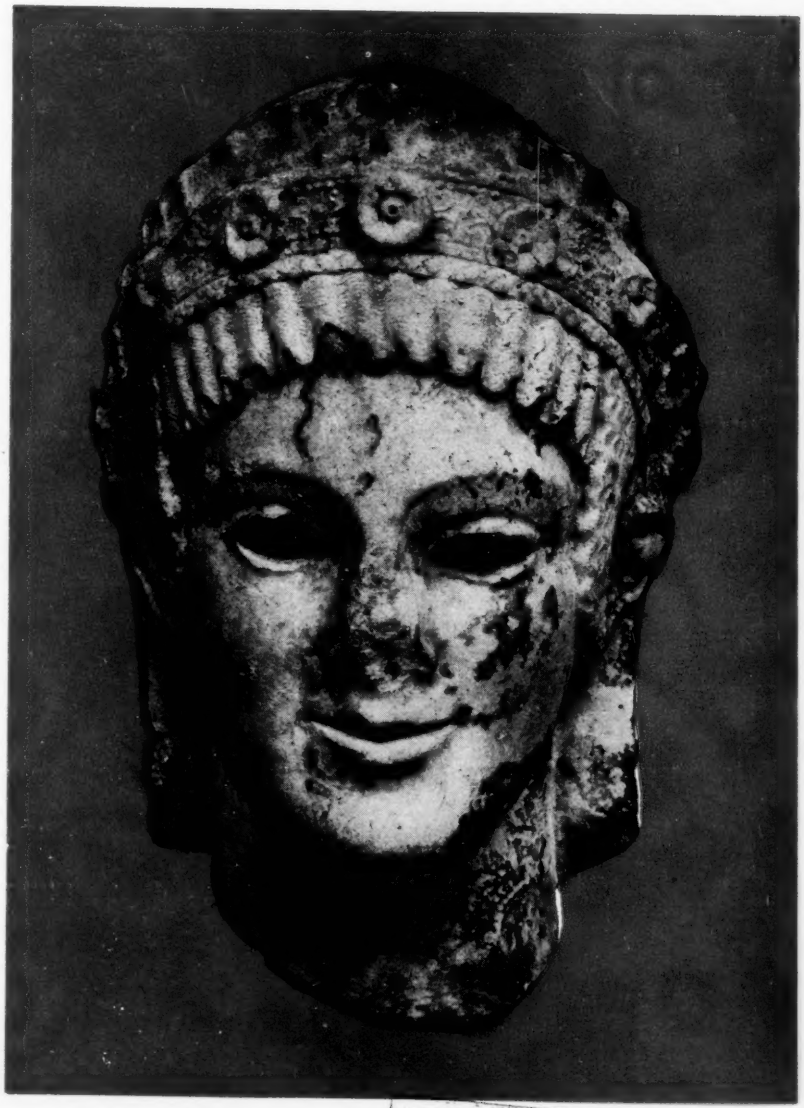
IN MODERN THOUGHT



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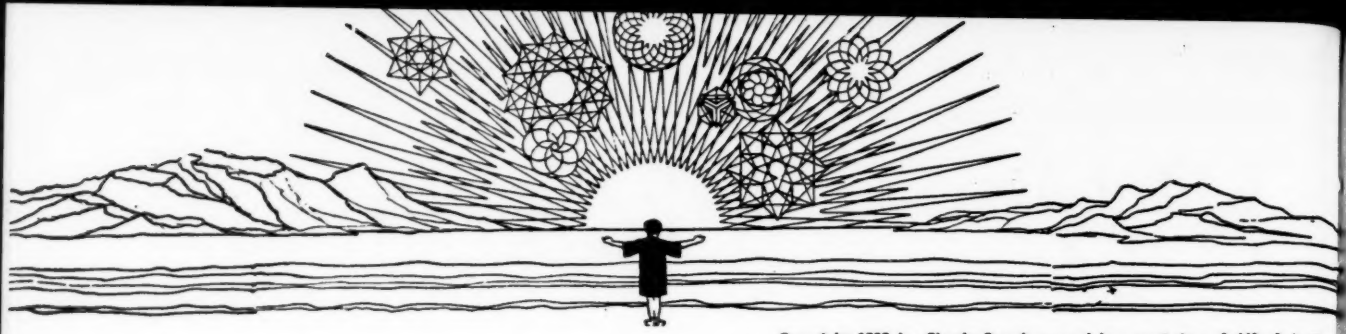

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MAIN CURRENTS
IN MODERN THOUGHT

A cooperative journal to promote the free association of those working toward the integration of all knowledge through the study of the whole of things, Nature, Man, and Society, assuming the universe to be one, dependable, intelligible, harmonious.

CONTENTS

Activism and Spiritual Communion	P. T. Raju	75
The Great Adventure	Saint John Perse	84
Notes on Modes of Thought	C. Gattegno	86
The Symbolization of Motion	Richard H. Byrns	89
News and Notes		92
Reviews:		
Open Vistas, by Henry Margenau Reviewed by Kirtley F. Mather		95
The Intelligent Agnostic's Introduction to Christianity, by Eugene Rolfe Reviewed by Martha Jaeger		96

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ACTIVISM AND SPIRITUAL COMMUNION

P. T. Raju

The Integration of Science, Ethics, Aesthetics and Religion through their Relation to the Conscious Being of Man

IT has been the usual practice of the general presidents, with of course some exceptions, to speak about the great spirituality of our culture, the spiritual orientation of our philosophies, and even to give spiritual advice. But I feel that I am not competent to follow their example, since I have no claims to spiritual leadership. As a student of philosophy and a plebian worker in the subject, I feel also that the duty of a philosopher is wider than that of dealing with spiritual matters and of expounding the doctrine of the Spirit. Philosophy is indeed incomplete without a serious concern for the spirit in man because our understanding of man will then be incomplete; but philosophy will be incomplete also if it is not concerned with the how and why of human action and with the material world in which action takes place and in which man's spirit is embodied. Of the two, action and matter, the study of action is more important for philosophy than that of matter, since the actual study of matter is done by the scientist and, since, because action takes place in matter, the study of action involves a study of matter so far as the latter influences the former. The philosopher is not expected to be a scientist; his task is to understand and expound the nature of man, his life and its ideals, and the action necessary for realizing the ideals. Besides, the task of the philosopher is mainly rational, although it is not confined to the study of reason alone.

Indian life and culture have reached the greatest spiritual depths; but India has had to pay for its profound spirituality. The essence of spirituality is communion with the Divine Spirit. Man can know his existence, that is, he realizes his existential consciousness (*svarupa jnana* as it is called in Indian thought) only in that communion, for communion with God is possible only in man's pure existential form. But no human being, so long as he lives, can stay continuously in that communion; even the greatest Yogi comes out of his *samadhi* (trance) one time or another. For the great majority of mankind, a life of spiritual communion alone is not possible. Man has to live in the world of action. The man who does not take the world of action seriously must be prepared to forego all that the world can offer. Even if he is not prepared, he will be deprived of it. Russell says that any country can deny, only at the risk of its very existence, the reality and importance of matter; and what he says holds true of the life of action also. Life is activity; and without action there can be no life. This truth applies to both the individual and society.

Students of Rousseau know his diatribes against Christianity. In fact he was opposed to all religion, which tears away man from society and social action. Even Schweitzer in contemporary times is opposed to Christianity for its other-worldliness, and says that the western life of activity and world-affirmation is not due to its religion and philosophy but to the very nature of the western man. I do not wish to examine the arguments advanced by these thinkers to prove their theses. But we can and have to accept that, if a culture or religion is too other-worldly and if it deprives society of the majority of its leaders of thought and action, life suffers a terrific loss and any country in which this phenomenon occurs will be deprived of the values of life which are belittled by its religion. And I may refer to Mahatma Gandhi's opinion that he found religion not in secluded life and meditation, but in ethical and political action in the service of man. Action for the realization of the values of life is the training for spiritual inwardness. Humanity cannot both shun these values and attain spiritual inwardness. On the contrary, we know, humanity wants them. But we cannot insult a lady and still expect her to bestow her gifts on us. Why did many of the ancient thinkers of India, China and even the West conceive matter as feminine?

Yet we cannot undervalue spirit, which is the core of man's conscious being. It is the source of his freedom which he shows in his activity of shaping matter and which is much more obvious in his ethical struggles. He lives the greatest part of his life in the ethical world, and can hardly afford to be excluded from the world of action. But philosophically we have not been able so far to reconcile religion and ethical activity. We have not been able to understand the way either from ethical activity to spiritual communion or from spiritual communion to ethical activity. So far as man living in society and desirous of realizing human values is concerned, it is important to understand the former. We cannot understand how God created man and so cannot explain how ethical

activity can be derived from spiritual communion; but it is absolutely necessary to understand and explain the other direction from ethical activity to spiritual communion.

Most of us know the difficulties involved in the problem. Kant was unable to relate the necessity in nature with ethical freedom. Bradley saw no way of defending the reality of the ethical world and of action, because the world of ethical action has to be pluralistic and therefore relational and nothing that involves relations can be real. In India Sankara held a similar view. Our consciousness of the world of action is a consciousness of plurality and differences. It cannot therefore lead to a cognition of the real, which is devoid of differences.* The two forms of consciousness are opposed and so one cannot lead to the other. Even if we do not accept Bradley's argument against relations, we have to accept that the two forms of consciousness are opposed. Apparently, in the ethical consciousness we subject the object to our will; but in spiritual experience, we surrender our whole personality—thought, will, and feeling—to the Supreme Spirit. Contemporary scientific philosophers who are more impressed by the methods of the physical sciences than of any other, the logical positivists and those influenced by their thought and the linguistic philosophers, are all unable to defend the reality of even ethics, much less are they able to defend the truth of spiritual consciousness, with the result that the ethical and spiritual forms of consciousness are explained away as mere forms of emotion and imagination without any truth value.

The situation is disquieting not only philosophically but also culturally. We are unable to pass from science to ethics and from ethics to spiritual communion. The former problem was not as keenly felt by the Indian philosophers as the latter, only because scientific thought was not as well developed in their time as it has been in modern times. But both the problems are equally important, because, if religion weakened ethics at some time, science has weakened both ethics and religion. From the presuppositions and methods of the study of matter we are unable to pass to the presuppositions and methods of ethics, and from them again to those of religious consciousness. The possibility of ethics is excluded by the methods of the physical sciences and that of spiritual communion by those of ethics. How then are we to find a solution to the main problem with which philosophy started everywhere, in Greece, India, and China, viz., the problem of the philosophy of life?

The methods of science are concerned with the object which science studies, and similarly are the methods of ethics and religion concerned with their respective objects. Apparently they seem to have nothing in common. But has their reality nothing in common, nothing that runs through these objects and the presuppositions and methods of their study? The common factor of all the three forms is our consciousness that finds them to be different and is baffled in interrelating them. A solution to our problem can be found, if at all, only in the study of our consciousness. The center of interest for philosophy must be man's consciousness itself. We thus come back to the Socratic exhortation, "Man, know thyself," the Upanisadic exhortation, "Know the self," and the Confucian teaching that man should know himself. This apparently simple but great teaching was given in different contexts. ethical, political, religious and social. Yet it has an important common significance, which the poet, Pope, enunciated, namely, the proper study of mankind is man himself. This is not a false glorification of man, but a calm philosophical judgment, for the different fields of experience can be found related and understood only in man. To explain their relations is the main task of the philosopher as distinct from the scientist and the religious teacher. All other studies are subsidiaries to the study of man in action, so far as the main task of philosophy is concerned.

One can see the importance of this view about the main task of philosophy and the centrality of man if one considers the common Indian opinion that the Mimamsa philosophy which is based upon the first two parts of the Veda is meant for the man of action and the Vedenta philosophy for the man seeking salvation. But here we have two systems of metaphysics, each claiming absolute truth. And they are so opposed that, if one is true, the other has to be false. Yet it is said that the Vedanta is true for the mature mind and the Mimamsa for the immature. But if maturity means the ability to understand complex technicalities, then the Mimamsa is no less difficult than the Vedanta. If maturity means acceptance of the Vedanta as true, then one argues in a circle: if a mind accepts the truth of the Vedanta, then it is mature; but the Vedanta is true because it is accepted by a mature mind. In any case, the very fact that we refer both the philosophies to man for deciding their truth implies that man is the center of philosophical truth. He has to decide for himself—in terms of his nature, activity, environment, and ideals—which philosophy is true. There seems to be no escape from the conclusion that man, as a conscious being, is the center of reference for all philosophy, if it is to retain the aim it originally had in all the grand traditions of the world, the aim, namely, of being a guide to life.

Man as a conscious being is then the center of philosophy. He is the clue to the understanding of the nature of the world. But the nature of the world is just what man can understand it to be.

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* *asya hi (brahmajnanasya) bhedavalambikamajnanam kva upayujyate, pratyuta viruddhameva.* Ramanuja's *Sribhasya*, Vol. I, p. 5. R. Venkateswar and Co., Madras, 1909.

Even when we say that there is a part of the world which we do not understand, it is still the world which our understanding posits. But to say this is not the same as accepting the subjectivism and skepticism of Protagoras. Although Socrates and later Hegel took man as the universal man, not as this or that particular man, and thought of mind as the reason in man, the full implications of this change have been generally missed by western philosophy, because it conceives man's consciousness as necessarily subjective. But *first,* as we have already noticed, if we omit man's consciousness, we miss all possibility of relating science, ethics and religion. *Secondly,* consciousness can be subjective, but not necessarily subjective. For the purpose of eliminating the subjective factor in observation, the scientist has invented instruments of observation. But who is to read the instruments and note the results? It is again the scientist. It is his consciousness that receives the results, and it is his consciousness that interprets them. The man with defective eyesight and powers of calculation and interpretation may not be trusted. But even he who is trusted uses his own mind and consciousness. So the work of consciousness can never be avoided. What the scientist is doing then is to use a consciousness which can be universally valid. What he demands from every other scientist is the use of the universal consciousness in him and the keeping back of the particular consciousness. The scientist knowingly or unknowingly assumes, therefore, the presence of universal consciousness in every man, which is somehow one with reality and whose observations cannot be false. We may not be one with it at every moment of our life; but it is assumed that we can be one with it at some moments of our life. We may call it by any name, universal consciousness, Absolute Reason, Cosmic Reason, *Buddhi,* or *Sattva;* it is the Logos of the Greek philosophers. Simply because it is consciousness, it is not merely subjective and false.

In the *third* place, it is usual to disregard consciousness, because, for instance, my consciousness of the wall in front makes no difference to the existence of the wall. I do not here wish merely to refer to the idealist answer that, if none is conscious of the wall and its qualities in perception, imagination, or thought, there is no ground for asserting that there is a wall. For even when I cognize the wall, it exists for my consciousness as independent of my consciousness. My consciousness does not posit is as being produced by me. Here the existence of the wall is independent of my consciousness and I think that my consciousness of the wall makes no difference to its existence. But my being conscious of my own existence makes all the difference to my existence. If I am never conscious of my existence, I cannot exist. In this case, my consciousness of existence and existence have to be identical. My existence is not something postulated or inferred; it is not something proved by myself or by some one else to me. It is self-evident and self-revealing. It is not the object of rational proof, but the proof-maker himself. Even if one ignores it in one's intellectual activity, it is in the forefront in one's ethical and spiritual life. As existential consciousness, it is one with the rest of existence. For my consciousness as existential is not directed towards any object from which it can differentiate my existence.

Our conscious being, the study of which has to be as autonomous as that of matter, is the basic fact in ethics and religion. But it has become suspect in the course of the progress of scientific methods, which, being concerned mainly with matter as apart from consciousness, have produced an indifference and even disregard for the conscious being of man. For the scientist, the idea that the existence of consciousness in observation has to be ignored may work. But for the student of ethics and religion, it does not work. If he ignores the existence of consciousness, he ignores the existence of the very object he has to study, and studies not ethics and religion, but the objects of science. But as mentioned already, consciousness is the common factor of the three forms of objectivity—the scientific, the ethical, and the religious—provided we keep in mind that the scientific consciousness is not merely the consciousness of this or that particular individual, but the universal consciousness common to all individuals and is what the Greeks called the Logos or Cosmic Reason.

III

ONE may have already suspected that I have been speaking of different kinds of consciousness in my plea for taking the existence of consciousness more seriously. There is *first* the existential consciousness, the consciousness of my existence, which is at the same time the existence of that consciousness. It is self-revealing existence of oneself. There is *secondly* the consciousness of objects, which is not the same as the existence of the objects. This is generally the consciousness which the psychologists study and which the western philosophers in general and the Nyaya-Vaisesika and the Mimamsa philosophers in India think of. Some of the western existentialists have, on many occasions, comprehended the first type of consciousness also. *Thirdly,* I spoke of the universal consciousness in man, which was observed by Heraclitus and Plato, Hegel and the idealists, the Samkhya and the Vedanta philosophers, and in a sense by the phenomenologists. And in the *fourth* place, I have spoken of the consciousness in ethical and religious experiences, to which we should add consciousness in aesthetic experience. Another form is our consciousness in intellectual activity.

Apparently we seem to have many forms of consciousness and have to face the problem of in-

terrelating them in order to have a unified perspective of our being and the world. But in spite of the many technical complexities involved, the problem is not without a clue for solution. Although there are several forms of consciousness, they all belong to the same entity, man. They are either his being or belong to his being. Existential consciousness is certainly his very being. Religious consciousness, if understood as directed towards an object other than man's conscious being itself, is not obviously his being itself. The other forms of consciousness—intellectual, ethical, and aesthetic—have an outward reference, and so do not constitute his being, but belong to it. In terms of this analysis of consciousness, we have to say that man's conscious being has two directions, the inward and the outward. The inward consciousness is concerned with one's own existence and reveals to man his own essential being and the being of the Divine Spirit within. But the outward consciousness is concerned with the objects of science, ethics, and aesthetics. And if the Divine Spirit is conceived as outwards to man's being, then it also has to be revealed by man's outward consciousness. But according to both Sankara and Ramanuja, it is inward to man's being. In the psycho-physical realm man's existential consciousness identifies itself with the objects of his outward consciousness. For instance, my existential consciousness identifies itself with my physical body, which is yet an object of my consciousness, and I say: "I am so many feet tall." Man lives under the pressures and pulls of these two directions, the infinite Divine Spirit pulling him—if we accept that the Divine Spirit is inwards to man—in the direction of inwardness and the material objects pulling him in the direction of outwardness; and in this tension his consciousness sometimes becomes one with one object and at other times identifies itself with another. And this change in self-identification is the transformation of his being. When man's consciousness identifies itself with something higher and more universal, his being becomes higher and more universal; when it identifies itself with something lower and particular, his being becomes particular and petty.

IV

BECAUSE of the modern thinker's overwhelming interest in the material object and because of the strong influence which the scientific methods have wielded on the philosopher, the transformation of man's conscious being in his intellectual, ethical, and aesthetic activities has not been satisfactorily studied. This transformation is a peculiar and important process of our life, contributing either to the deepening and universalizing of our being or to its hardening and particularizing. And it takes place through our intellectual, ethical, and aesthetic activities and experiences. It is because of this transformation that these activities and experiences become values; otherwise, they have no spiritual significance. They belong to the three aspects of our conscious being—cognition, will, and emotion,—and correspond to the three values—Truth, Goodness and Beauty.

One may wonder how Truth or cognitive activity transforms the conscious being of man. It can be illustrated even in the simple act of cognition of the pen in front. When I perceive the pen, both my mind and my sight are fixed on it. I am then conscious of the pen. In the act of cognizing the pen, there are only two factors, the pen and the consciousness of the pen. The form of the cognition is only "the pen." It is not of the form, "That is a pen," not also of the form, "I see the pen." In the form "That is a pen," consciousness has become relational; it refers not only to the object in front, the That, but also refers the object to the class of pens. But when my consciousness is directed to the pen in front, it could not have been directed to the class concept. Likewise, in the form, "I see the pen," my consciousness refers to the "I" as identified with the body, that is, the ego; but when it is directed to the ego, it could not have been directed to the pen in front and *vice versa*. It is the nature of mind to be fixed on only one object, whether it is an individual or collection. So in the direct cognition of the pen, there can be nothing but the pen and consciousness. Certainly, this consciousness belongs to me, and the pen belongs to the class of pens. And one may even say that, unless and until the cognition takes the form, "That is a pen," perception is not complete. But at the stage of the process of the direct cognition of the pen, the ego, the class, and the reference to both are left in the background. My ego and the class do not intrude into the direct cognition of the pen.

There is thus in cognition a consciousness with the ego left back. When the same pen is perceived by other men, their consciousness also leaves back their egos. Now, the pen is the same for all, and the consciousness of none is particularized by the ego. This consciousness, therefore, belongs to universal consciousness which is in tune and one with reality. Even when cognition rises to the level of "That is a pen," consciousness is still universal, in spite of being relational; for "That is a pen" also is common to all men. It is therefore a part of the Cosmic Consciousness itself and is a form of the Logos. Thus every intellectual act that is true becomes an instance of my oneness with reality and the Logos. But if I see the pen as a sleeping worm, my consciousness is cut off not only from reality but also from the other consciousnesses which are in tune with it. My consciousness then attains a false universality, which is really particularity and which is intruded into and perverted by my ego. Truth, therefore, becomes a value for me, because it transforms my consciousness into a real universality. It enables me to

transcend the particularity of my ego and attain one-ness with reality. Apart from the transformation of my being, the attainment is not a spiritual value. To know the plant as a plant, the pen as a pen, and the worm as a worm has no spiritual significance, unless this transformation process of my cognitive being is taken into consideration.

What holds true of perception holds true of the inferential process also. When our reasoning is true, our consciousness rises to the level of universality and is true for all men. Even in the process of actual reasoning, the ego is held back, and when our reasoning is true, our consciousness is in tune with reality and becomes universal.

Similar is the universalizing process in ethical activity; but it is more important, because in all serious ethical struggle the "I" or existential consciousness is more explicitly involved than in the cognitive process, and is transformed into a higher and universal "I" when the right ethical action takes place. The moral man is one who views and plans his action from the universal point of view, and makes his ego rise to that universal point of view. Kant's moral dicta, for instance, imply this view. The universal consciousness, Logos, or Cosmic Consciousness is an existential consciousness without the particularizing ego-involvements. It is to this that ethical consciousness lifts us. And what is called the higher is really the deeper, the more inward to the being of the ego. Even in the case of cognitive consciousness, in the actual process of cognition, the ego is held back and what is achieved is the universality of our conscious being, which is equally inward to the ego. The ego emerges out of this universal consciousness like a superstructure from a foundation. The test of universal consciousness is that for it to be conscious of an object is at the same time the existence of the object. Thus what Kant calls intuitive understanding is present in our intellectual activities at certain stages and moments. But so far as we are concerned, neither in mere cognition nor in mere action can we be sure that the test is satisfied. Each confirms the other.

As in both cognitive and ethical activities, in aesthetic activity also, one transcends one's ego. In the actual process of aesthetic experience, the appropriating activity of the ego is held back. At that moment we do not try to take possession of the object, but only contemplate it. The mind that goes towards the object comes back, and settles down in the enjoyment of the harmony of the form with itself. In the consciousness of this enjoyment, the ego is transcended. If the nature of the ego is appropriation of the experience in the form, "I see," "I suffer," "I enjoy," etc., then it is not to be found in the actual aesthetic experience, which is therefore universal and cosmic in significance. Just as cognitive consciousness is universalized in intellectual activity and will in ethical activity, emotional experience is universalized in aesthetic activity. But in each of the activities our consciousness is universalized in a different way, and the ego-consciousness is transformed into a higher kind of consciousness.

V

BUT are the three forms of higher consciousness different consciousnesses or are they one and the same appearing in different forms of activity? Now, all the three forms of activity take place in me. When my ego rises after the experiences, it attributes all the three to itself. We have therefore to say that they are the same conciousness in different forms of activity. In the philosophy of Plato, the Good and the True are finally identified, and Socrates is represented as saying that virtue is knowledge and knowledge virtue. In the philosophy of Kant it is not clear whether theoretical reason is ultimately identical with practical reason and the two again with aesthetic reason or reason as expounded in the *Critique of Judgment*. But that all are reason—and Kant treats all as transcendental—shows that they are somehow different forms of activity of the same consciousness, which is universal and identical with the Logos. In Indian thought, particularly in the Sankhya and the Vedanta, Truth, Goodness and Beauty are attributed to the same entity called by different names: *Buddi, Sattva, Mahat,* and *Mahan Atma.* They are three aspects of the self-same entity, the universal consciousness or Cosmic Reason present in every individual. Whatever be the differences between the philosophies mentioned, the general tendency to attribute these forms of consciousness to a universal consciousness present in every one of us is noticeable.

Will is really our existential consciousness (self) in action directed towards an object. Emotion is a pull or tension in the same consciousness, and in aesthetic experience this tension is relaxed because of the experience of attunedness or harmony of the objective form and the subjective consciousness. The consciousness that is pulled by an emotion towards the object is drawn back and settles down in the intensity of experience, which is aesthetic experience. No form has to be imposed upon the object; its own form is contemplated and enjoyed. In pure intellectual activity, there is emotional and ethical indifference to the object, and there is no desire either to enjoy its form or transform and possess it. The ego is held back in cognitive experience as in the other two experiences, but even later, as cognitively viewed, the ego remains indifferent to the object and is not interested in it aesthetically or ethically. There is no attempt to impose one's personality on it or enjoy the reflection of one's personality in its form. In ethical activity, there is an attempt to impose one's personality on the object, make it a personal possession. In aesthetic experience,

without any attempt on the part of the ego, the oneness of its being with the object is realized in the harmony of one's being with the form of the object. Aesthetic experience thus seems to be existentially deeper than the ethical and the ethical than the intellectual. But often in our experience, the three forms are mixed up in varying degrees. For instance, even in intellectual activity, a scientist who has made a discovery may say: "This is my discovery." And others may name it after him like "Newton's Law" or "Einstein's Theory." But there is no possessive significance.

Of the three activities, considered from the spiritual point of view, the aesthetic seems to be existentially the most important. Like the ethical, it concerns our existential consciousness and exerts a pull on it. But it resettles it emotionally, not through action. In addition, it exhibits the inner harmony of the subjective and the objective by carrying both to a deeper level of our being without the exercise of our will. Furthermore, our ethical consciousness includes the intellectual, because the object on which our will works is a known object. But our aesthetic consciousness transcends the ethical, because the form of the object presented is a form that is already in accord with our being and does not need the exercise of our will to bring it into accord. In the Logos or Cosmic Reason this accord is ever present.

Although the three higher forms of consciousness belong to the Logos and have an integral unity in it, so far as we are concerned, we realize each separately, momentarily and in part. This is due to our finitude. Hegel's mistake lay in claiming to unravel the Cosmic Reason in its fullness without recognizing the finitude of our reason. In each of us, the I-consciousness transcends the ego, but yet does not become completely one with the Logos. Through each one of us, the I-consciousness realizes its oneness with the Logos, but only partially, and then again a part of one of its aspects. So it is not possible for human reason to unravel the detailed structure of the Logos, either through dialectic or inference, unless and until human reason attains the stage at which it is consciously one with everything that exists. That is, it must become one with what Kant called intuitive understanding. Now, why the Logos has only three aspects—Truth, Goodness, and Beauty—but not more or less cannot be answered *a priori*; we recognize the three aspects only because we find them in ourselves and we posit the Logos as a deeper core of our being. And we cannot realize the aspects of the deeper core of our being except through the respective forms of activity. The three aspects, so far as we can understand, comprehend the whole of our conscious being. Others like imagination are of secondary importance so far as our spiritual transformation is concerned.

VI

WHAT, next, is the form of religious consciousness or spiritual communion in the strict sense of the term? In spiritual communion our whole being is in contact with the Divine Spirit in us. What can come into contact with the Divine Spirit is our being purified or, in Indian terminology, our being that has become *Sattva (or sattvika), Mahat, Buddhi,* which is cosmic in significance. To have cosmic significance means to be in complete tune with reality—intellectually ethically, emotionally—and so to have transcended the particularity of the ego. In each of the activities above discussed, we transcend the particularity in only one aspect, partially and for the time being. The downward pull towards particularity is not overcome. When it is overcome, we can stay at the level of purity and aspire for communion with the Divine Spirit. It is to this stage of our inward and existential transformation that religion or spirituality in the strict sense of the term belongs. The other three forms of activity are necessary steps to spiritual communion.

It is held by some philosophers that in spiritual communion our personality is retained. This is an idea that has more emotional appeal than reflective clarity. It is difficult to understand how one's personality with all the different qualities and their shades goes to God and obtains communion. We can understand only that our personality or being made pure through the three forms of activity and raised to a level which is universally the same for all personalities can enter spiritual communion. What can get into communion must be the same or at least similar for all men. We have then to say that part of our personality which is pure gets into spiritual communion. Even Plato and Aristotle held that only the rational part of the soul is immortal; the rest is left back and perishes. But the part that is eternal is what we called the universal form of our consciousness and transcends the ego. And to call it a part of the soul is misleading; it is really a form of our being into which our ego is transformed. Our being is fluid and dynamic, but not static with compartments. But this universal form of consciousness is not a personality which the psychologist studies. Even Ramanuja, who is strongly opposed to the merging of the I-consciousness in the Brahman, says that that which enters into communion with God transcends the *manas* (mind), *ahamkara* (ego), and finite reason (*buddhi*). The nature of the *atman* which is in spiritual communion is not any personality we can think of. Ramanuja says that the I-consciousness is the very essence of the *atman* and remains in communion; and the communion takes place through purified attribute-consciousness (*dharmabhuta jnana*) which has been described earlier as our conciousness in the outward direction. But according to Sankara, even the I-consciousness, as the pure witness of all our experience, is tran-

scended and even the "I" disappears as the center of communion. The outward consciousness is inwardized and absorbed into one's existential consciousness (*svarupa jnana*). It is out of place for me to discuss the pros and cons of the differences between these two great thinkers; but in any case, one has to be very careful in speaking of the retention of personality in spiritual communion.

Now, spiritual communion or communion with God or the Brahman, whether one follows Sankara's view or that of Ramanuja or of the western theists, is possible only through the transformation of our ego into a consciousness of cosmic significance. We find this idea in Heraclitus, Plato, Aristotle and Plotinus, whose philosophies are yet different. Pythagoras believed that mathematics takes our consciousness near God, because it is rational and unegoistic. The word "theory," which means something abstract, is derived from the word "Theos" meaning God, because it is through abstract consciousness that God is realized, "abstract" meaning nonparticularistic. We can have no access to God through the particularity of the ego. The medium through which we can have access is *Sattva* or Reason with cosmic significance.

But this *Sattva* cannot be attained by man except through the three forms of activity mentioned: the intellectual, the ethical, and the aesthetic. Because of Sankara's polemic against *karma* (action) as not leading to true knowledge and because of what he said in his commentary on the first of the *Brahmasutras*, namely, that one could start enquiry into the nature of the Brahman even without enquiry into the nature of ethical action, it has been thought that ethical action can be ignored by one desirous of salvation. But if the above analysis of the transformation of the ego is true, ethical activity also is necessary for becoming one with *Sattva* or Reason. The three forms of activity are necessary for clearing the way of spiritual inwardness towards pure existential consciousness. As activity, ethical activity is more important than the other two. For I may enjoy myself in a false realm of intellectual and aesthetic activity without disturbance from outside. But if I build up a false realm of ethical action, I shall get a severe shock from reality. The realm of action is the safest place for finding true inwardness.

In fact, Sankara was not unaware of the importance of ethical action. He says that it purifies the mind. He does not explain at length—as, for instance, he explains the conditions of epistemological truth—how ethical action purifies the mind and what exactly this purification means. On this point, the controversy between the Advaitins and Ramanuja is very significant. Sankara rejects the necessity of knowing the nature of right action for one desirous of salvation, Ramanuja defends its necessity. But curiously enough, both admit that right action leads to the purification of mind by strengthening the *Sattva* in us. Both seem to think of the *Sattva* as one of the attributes (*gunas*) of Prakriti. Ramanuja posits, indeed, another called *Suddhasattva* (Pure *Sattva*), and differentiates it from the *Sattva* belonging to Prakriti. But the only difference between the two is that the latter is contaminated by *rajas* (activity) and *tamas* (lethargy), the two other attributes of Prakriti. But from our point of view of inward transformation, the Pure *Sattva* is the contaminated *Sattva* purified and universalized and made cosmic. It is the pure universal consciousness, which is cosmic in significance as the Sankhya explains. In the individual it corresponds to the *vijnana* and in the cosmos to the Mahan Atma of the *Katha Upanisad*. Now, if ethical action produces this intensification of the *Sattva*, how can any one have this intensification without ethical activity? If it can be had through renunciation, how can any one make true renunciation without realizing the oneness of his being with the *Sattva*? If it can be had from dissociating oneself from all action, both good and evil, how then can one be sure that thereby one is not separating one's ego from the rest of reality and is not hardening the particularity of the ego instead of purifying and universalizing it, just as Arjuna was about to do by giving up his duty? What does *buddhiyoga* or the Yoga of Reason, recommended to Arjuna, mean? One can understand that, after attaining the *Sattva* stage and in the attempt to have communion with the Divine Spirit, one leaves back action. But for attaining *Sattva* one has to perform ethical action. And our analysis of the three forms of activity has also shown that it is necessary. Thus without ethical action, there can be no spiritual communion. And all the forms of activity, whether one knows or not, have spiritual significance.

VII

NOW, we may ask again the question: How can science, ethics, aesthetics and religion be reconciled with one another? How can they be related positively with one another? The only answer is: By relating them to the conscious being of man. The different objects of science, ethics, aesthetics and religion are related to each other not in their externality and isolation from one another, but through the different forms of the consciousness of man, which constitute the integrality of his being. The values which belong to these realms are values because of the conscious being of man. No value can be a value unless it produces a transformation in the existential consciousness of man. The value that deepens and heightens man's being, lifts it to a higher universality, is a higher value; otherwise, it is a lower value. The latter lowers his being, makes him petty and out of tune with reality, and his ego becomes more particularized and hardened.

And in order to understand the relation between the different forms of objectivity through their relation to man's consciousness, we have to make a new approach to the study of man's consciousness. As it is for religion, for reflective philosophy also man's conscious being is the center of interest. But for several reasons we have misunderstood the nature of consciousness. The general tendency is to understand it like the light that reveals objects without interfering with their existence. And this tendency persists in spite of the strong suggestions of the classical philosophers to the contrary. This is also the usual way of understanding consciousness in the West. A distinction that is of great significance, drawn by the Advaitins and Visistadvaitins, the followers of Sankara and Ramanuja respectively, in this connection is that between *svarupajnana* and *dharmabhutajnana* or between existential consciousness and attribute consciousness, which has already been used. We need not enter into the differences of view between the two philosophies, but should note that this distinction helps us in re-establishing the importance of man's conscious being for philosophy by showing that values are values only in so far as they transform man's existential consciousness and that consciousness is not always an indifferent light revealing objects and yet remaining indifferent to their existence. Consciousness as existential consciousness is one with existence; but as attribute consciousness, as consciousness *possessed* by me, it is not one with existence, but reveals existence. As existing, I *am* my consciousness; but as being conscious of the wall in front, I *have* the consciousness, which is indifferent to the existence of the wall. How the two are related and can be related is one of the most important problems for any philosophy of life.

When we speak of existential consciousness, we are not speaking of something fixed. If it were a fixed entity, there would be no point in speaking of its transformation and universalization; and there is no need of any value, because no value can transform it. My existential consciousness is the consciousness of my existence and is one with it. Since my existence and the consciousness of my existence are one, my existence is self-revealing. Further, it reveals itself to itself only. And in so far as I exist as a man, my existence is all that with which I identify myself in the form of "I am." When I say: "I am so many feet tall," I am identifying myself with my physical body. When I say: "I am unhappy," I am identifying myself with my mental state. But both my physical body and my mental state are objects also of my consciousness. One of the peculiarities of the I-consciousness is to identify itself in this way sometimes with physical objects and othertimes with the mental, sometimes with some object of outward consciousness and othertimes with some inward depth of being. Man's conscious being has thus no definite demarcations and is spread out inwardly towards the Supreme Spirit and outwardly towards many kinds of objects, with some of which it identifies itself in the form, "I am that." At all stages, except at the highest or the deepest, which is that of pure existential consciousness, in which consciousness is not directed at all towards an external object, physical or mental, the I-consciousness, even when it identifies itself with some object in the form of "I am," is yet able to detach itself from the object and transcend it. This transcendence is the process of going deeper and, although it appears to be a process of contraction towards a central point, is at the same time a process of expansion, because the I-consciousness then comprehends and envelops all objectivity. It is like the Leibnizian monad, which is both infinitesimal and infinite. It is this aspect of the I-consciousness which is described by the Upanisads as smaller than the smallest and greater than the greatest (*anoraniyan mahatomahiyan*). It is because of this peculiarity of the I-consciousness, which is existential consciousness, that the three kinds of activity—intellectual, ethical and aesthetic—can transform it by making it more and more inward, universal and expansive. Human freedom, as experienced, is due to this inward transcendence. When our consciousness is completely inwardized and becomes completely existential, it enters into full communion with the Supreme Spirit. This inwardization is not fanciful self-hynotism or a mental state produced by drugs, but the realization of the one-ness of our conscious being with reality through the process of attuning our being with it. And this attuning is not possible without the three forms of activity carried out in this world. The inwardizing process, if it is not to be a false retreat into an imaginary self, has to be produced in accord with reality, since our true existence is at one with reality. And in order to be in accord with reality, one has to act in this world. Thus as Bosanquet and before him Keats said, the world becomes the vale of soul-making, the place in which true inwardization takes place in man. It is in the world of actualities that we can discover our soul, not in an imaginary world. If so, then in order to discover our soul, we have to be in constant contact with the world of actualities—which means that our consciousness cannot afford to be egoistic and isolated, but has to aspire to reach the level of the Logos or Cosmic Reason, which is constantly in tune with reality and for which consciousness of the object is at the same time the existence of the object. And this level of consciousness cannot be reached by man without ethical activity.

VIII

ETHICAL action, therefore, is indispensable for spiritual realization. Sankara then has to be reinterpreted at this point, since he recognized

the need of the pure *Sattva* for the realization of the Brahman. And the new interpretation is possible, if we approach Sankara from the point of view of man's conscious being. Of great significance, then, is the concept of *Sattva,* which is used as a synonym for *Buddhi* and *Mahat* and *Mahan Atma.* Not only writers on epistemology but also those on aesthetics refer to it. Another word occasionally used as a synonym is *samata* or equanimity. The equanimity or equilibrium of Prakriti in the Sankhya is unconscious, but that of *Sattva* or *Samata* is conscious. The consciously equanimous is the rational self. That is why Krishna exhorts Arjuna to take to *buddhiyoga* or the Yoga of Reason and take refuge in Reason (cp. *buddhau saranam anviccha*). Not only is rationality attributed to *Sattva* but also is aesthetic pleasure assigned to it. And when discussing the value of *karma* (action), the Good also is attributed to it. *Sattva* means also being, and yet it is also reason, goodness and beauty. It is not a function of mind, but our very being with a universal and cosmic significance. It is not a mere function or attribute, but existential. We obtain this significance not merely from our discussion, but also from the ontological status which the *Katha Upanisad* gives it. The two concepts, *vijnana* and Mahan Atma (*Mahat*) are the rational consciousness in the individual and the Cosmic Reason in the universe, and both of them are ontological stages to be reached by man.

Without a proper understanding of *Sattva, Mahat, Buddhi,* Logos, or Cosmic Reason, it is difficult to appreciate the relation between science, ethics, aesthetics and religion. Modern and contemporary philosophy bristle with difficulties on this problem, only because the philosopher attempts to understand reality and value, ignoring the conscious being of man, for which alone reality and value are reality and value. And man's conscious being* is not merely confined to his physical body, but extends far beyond even as existential. A new approach, a new kind of study of man is, therefore, the need of the day. And in it his being has to be understood as necessarily conscious. A new insight can be gained into the nature of man's conscious being through comparative philosophy, which brings together the views of eastern and western philosophers expressed in different contexts and evaluates them in the light of the important related problems raised in contemporary philosophical thought. The contexts in which the nature of man's conscious being is discussed and the aspects to which importance has been given, when brought together for correlation, bring implicit ideas of the philosopher to the foreground, open new philosophical vistas into man's being, through which ways for solutions of some of the most knotty problems of life can be seen. Thereby we can restore man to his original central place in philosophy and restore also the original prestige of philosophy as a guide to life. And life is spread out not only in the spatio-temporal world but also in the two directions of inwardness and outwardness, in which we find the significance of the relation between science, ethics, aesthetics, and religion.

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* For more details about the three forms of activity and nature of man's conscious being, one may see the author's "Religion and Spiritual Values in Indian Thought," (*Annals* of the Bhandarkar Oriental Research Institute, Poona and *Proceedings* of the Third East-West Philosophers Conference, Honolulu, to be shortly published), and also *Indian Idealism and Modern Challenges* (to be published shortly by the Punjab University, Chandigarh).

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THE GREAT ADVENTURE

Saint John Perse

The Poetic Spirit is Man's Link with the Unity of Being

Ed. Note: On the occasion of the presentation to him of the Nobel prize in literature for 1960, Saint John Perse responded with a eulogy of poetry. The address which follows has been translated by Marie Gouffe from the report which appeared in *Le Monde,* December 11-12, 1960.

I accept the homage which is here extended in the name of poetry, and hasten to make it restitution.

Poetry is not often held in honor. This is because the dissociation between the poetic endeavor and the activity of a materialistically oriented society seems to be increasing. This divorcement—which is accepted, not sought, by the poet—would be the same for the scientist were it not for the practical applications of his work.

What is here held in honor, however, is the disinterested thought which the scientist and the poet alike share. Here, at least, they may no longer be considered hostile brothers. For they both pose the same question above the same abyss; only the means of investigation differ.

When, in appraising the drama of modern science, its rational limits are found to reach to the mathematical absolute; when, in physics, two ruling doctrines are seen, one offering a general principle of relativity, the other a quantum theory of uncertainty and indeterminism, liable to limit for ever the very exactitide of physical measurement; when the greatest scientific innovator of the century, the initiator of modern cosmology, responsible for a vast intellectual synthesis in mathematical terms, was heard to invoke intuition to come to the aid of reason and proclaim "imagination as the true soil for scientific germination," going even so far as to demand for the scientist the benefits of a veritable "artistic vision"—has one not the right to hold the poetic instrument to be just as legitimate as the instrument of logic?

IN truth, any creation of the mind is first of all "poetic" in the real sense of the word; and, in the equivalence of sensible and spiritual forms, the same function initially takes place in the work of both scientist and poet. Which goes the furthest and comes from the furthest point—discursive thought or poetical imagery? And in that primeval night through which two men, both born blind, feel their way, the one equipped with scientific tools, the other helped only by flashes of intuition, which of the two will be the first to emerge, which will be most charged with brief luminosity? Never mind the answer. The mystery is common to both. And the great adventure of the poetic spirit is in no way inferior to the dramatic break-through of modern science. Some astronomers have become bewildered before the theory of the expanding universe; yet there is no less expansion within the infinite moral nature of man—a universe, indeed. To whatever furthest limits science pushes her frontiers, all along the extended arc of these frontiers the hounds of the poets will still be heard, raising their voices in the chase. For, if poetry is not, as has been said, "the absolute real," it nevertheless expresses most closely man's aspirations, it is his nearest perception of the real at the extreme limit of participation, when a poem seems self-informed. Through the use of analogical and symbolical thought, through the distant illumination of the mediate image, by the play of its correspondences upon numberless chains of reactions and unrelated associations, finally, by the grace of language which can transmit the very impulses of Being, the poet becomes invested with a "super-realism" which cannot belong to science. Is there in man a more powerful dialectic, one which is more encompassing of all that is human? When philosophers refuse to cross the threshold of metaphysics, then it is for the poet to elevate the metaphysician; poetry then, not philosophy, reveals herself as the true "daughter of wonder," according to the expression used by the ancient philosopher for whom poetry was most suspect.

But, more than a mode of knowledge, poetry is a mode of life—integral life. The poet existed in the caveman; he will exist in the man of the atomic age, because the poet is the irreducible part of man. From poetic exigency, spiritual exigency, religions themselves are born, and by poetic grace the divine spark lives forever in the human clay. When mythologies give way, the divine finds its refuge in poetry—perhaps even its transmutation. For in the social order and in

human immediacy, when those who carry bread in the ancient procession yield place to those bearing torches, it is because poetic imagination still fires the high passion of peoples in quest of light.

Pride of man on his way weighted with eternity! Pride of man on his way under his burden of humanity, when for him there opens out a new humanism of real universality and spiritual integrity. Faithful to its duty, which is to deepen the mystery of man, modern poetry is engaged in an undertaking the pursuit of which is nothing less than man's complete integration. There is nothing Pythic in such a poetry; nothing purely aesthetic either. It is not the art of an embalmer nor a decorator. It does not spring from cultured pearls; it has no traffic with sham or simulacra, and it finds no satisfaction in a musical extravaganza. In all its ways it allies itself to beauty—a supreme alliance, but not its final end nor its only sustenance. Refusing to dissociate art from life, knowledge from love, it is action, it is passion, it is power and innovation always, whereby it transcends boundaries. Love is its home, insubordination its law, it seeks its place everywhere. It does not ask to be accepted or rejected. It expects nothing from the advantages of the time. Bound to its own destiny and free from any ideology, it knows itself equal to life, requiring no justification. Like a living strophe, in a single embrace it takes in the present, all the past and the future, the human and the superhuman, all of planetary space with cosmic space. The obscurity for which it is reproached is foreign to its real nature, which is to shed light; obscurity belongs rather to the night which poetry explores: the night of the soul, the mystery enveloping man. Poetic expression has always rejected obscurity, and is as exacting as that of science.

THUS, by his undeviating adherence to that which is, the poet is our link with the constancy and unity of being. His is the lesson of hope. For him a unique law of harmony rules the whole phenomenal world. Nothing in it can happen which, by nature, exceeds the measure of man. The worst cataclysms in history are but seasonal rhythms in a larger cycle of concatenations and renewals. And the Furies who cross the stage, brandishing their torches, throw light but for a brief instant on the long, unfolding theme. Aging civilizations do not succumb to death pangs in their autumn, they only undergo a metamorphosis. It is inertia alone that is dangerous. The poet is that man who can stir us out of the stifling sameness of habit. It is thus that the poet in spite of himself becomes related to history. Nothing in the drama of his time is foreign to the poet. Let him speak out clearly of the flavor of life in this crucial time! For the hour is great and new, it is the hour in which to find oneself anew. To whom, indeed, should we yield the honor of living in our times?

"Fear not," says History, lifting for a day her mask of violence, as with upraised hand she makes the conciliatory gesture of the Asiatic Divinity at the height of his destructive dance; "Fear not, doubt not, for doubt is sterile and fear is servile. Listen rather to the new rhythm which my lifted hand now imparts to the human episode in its constant process of creation. It is not true that life can deny itself. Nothing living proceeds from nothingness or is attracted to nothingness. But neither does anything maintain forever its form or quantity under the ceaseless influx of Being. It is not in metamorphosis that tragedy lies. It is rather that our times have allowed a widening gulf to separate mortal man from man immortal. Should the light which falls upon man from one side only deepen the darkness on the other? And will not a forced development in a community without communion lead only to a false maturity? . . ."

It is for the integrated poet among us to attest the dual vocation of man. For this he must raise before spirit a mirror sensitive enough to catch spiritual possibilities. He must in our day call out a human condition more worthy of man as he really is. He must draw the collective soul more fully into the stream of spiritual energy flowing through the world. . . . Facing nuclear energy, will the clay lamp of the poet suffice for his task? It will if the man of clay remembers his origin.

It is enough for the poet to be the conscience of his time.

NOTES ON MODES OF THOUGHT

C. Gattegno

The Need for Multivalent Thinking—a Mode Adequate to the Varied Challenges of Human Experience

THE nature of thought processes (thinking as an activity) is still very little understood. People think, and as a result new ideas, new visions, new theories become available. But almost no one knows whence these come and how they develop. The ordinary man has on the whole little occasion for original thinking. He is, however, able to produce mental structures and mental behaviors which permit him to reach satisfactory conclusions, and this convinces him that his thinking is operative. This kind of process can be called thinking to a pattern, because it utilizes the conventional stereotypes most people are accustomed to. In such a way a man may solve a business problem successfully, through recourse to the intellectual processes and environmental factors within his everyday experience. Thus we can say that in addition to the kind of original thinking which permits the unknown to be grasped or the familiar to be blown up so that it yields new aspects, there are *modes* of thought that form the background of conventional thinking.

The distinctive modes of thought can be roughly described as isomorphic with language. It is well known that languages are limited; no one language can express all varieties of thought and feeling. For this reason translators often miss meanings, since they start with the presumed content of statements rather than with the intimate experience which the writer tries to convey in words; some writers cannot be rendered properly in certain languages. Thus it is that languages act both as vehicles and as filters for thought.

Because of this, it might seem that if men could learn one common language they would understand each other more completely. But it is not possible to say that their understanding would be even slightly greater than it is now, for it is the spirit of languages that betrays thought, not the basic vocabulary. Nonetheless, anyone who lives a language and gains its spirit acquires a mode of thought at the same time. It is the writer's experience that there are as many modes of thought as there are languages, and that the modes approach more closely to each other when the languages that objectify some of their aspects are also close. This fact may result in a clarification of the different modes of thought along the lines of work already done by philologists.

SCIENTIFIC thinking seems to have adopted mathematics as its language. But we cannot speak either of scientific thought or of mathematics as being this one thing or that one thing. It is only when we talk superficially that we can define the scientific method in a single clear statement. To my mind, each endeavor of scientists to enter more deeply into the mystery of the universe has required a renewal of the spirit of science. In fact, I would go so far as to say that there is no more *a* scientific method than *an* artistic method or *a* mystic method. Descarte's method, for example, turns out to be just analytic thinking which needs amendment when confronted with challenges met outside classical mathematics. Scientists use all sorts of devices in their work, in order to gather more light upon their problems and find a fruitful track to follow through the maze of probabilities. Empiricism, analogy, models borrowed from other fields of experience—all these things and many more play a role in whatever progress the scientist is capable of making in his search. If we read Kepler or Faraday, we become convinced that the conquest of the unknown is not to be won through a mere sifting of evidence or study of the literature of the subject; it requires a renewal of the self. Trial and error, participation, are of the essence of any search.

When we speak of the scientific method, we usually mean an attitude of mind that contains both skepticism and the capacity to remain unmoved if one's ideas are found to be inadequate to meet challenges—though these two qualities are but rarely displayed by scientists. The scientific method is indeed a mode of thought which is open: always ready to adapt itself to the reality encountered, never rejecting anything because it is not in conformity with predetermined schemes, and constantly trying to develop the means that permit real understanding of the unknown. This process, in mathematics, requires emotional neutrality and a conscious commitment to the service

of the dynamics implicit in the study, that is, the inferences which appear through equivalences and algebraic transformations. The edifice of existing mathematics is the formalized body of definitions, theorems and proofs which constitutes the so-called language of science. But mathematics is also a creative activity displaying diverse modes of thought. It is this fact that creates gulfs between the generations, for one person is not even able to figure out what another conceives to be obvious and immediate. Therefore, if we try to oversimplify our concept of mathematics and define it as one specific and limited thing, we are as much in error as when we try to limit science to one kind of experience.

In forgetting the human, unpredictable element in scientific endeavors, we lend ourselves to the mixing of issues; we merely create those stereotypes and pseudo-problems which admit of endless discussions and no conclusions whatsoever. For instance, it is generally assumed that engineering is a product of science, and that successful technology results from a developed science. As a matter of fact, however, engineering is a mode of thought which has been developed by anglo-saxon empiricists; it is not the only scientific frame of reference. Insofar as the rapid growth of the physical sciences required apparatus of an ever-increasing complexity, the development of these sciences was closely related to engineering; in the West technology thus advanced side by side with physical science. Nevertheless, not all efforts at understanding the universe of experience fall within the engineering mode of thought. The Greeks had a science for which they did not use mechanical models; the Indians have always been primarily interested in meeting outer truth via inner truth; the ancient Chinese looked for a universal key to men's behavior in the various aspects of their reality. These different approaches all achieved remarkable success in extending man's understanding of reality. If science represents modern man's efforts to know what is, and to reduce his own interference with what is, then man's various ways of getting at truth must all be taken into account. If we give priority to the engineering mode of scientific study, and deny validity to other modes, we operate from a bias that will only hinder us from meeting what cannot scientifically be ignored.

The test of the value of any scientific theory is generally considered to be its capacity to predict. This would be an acceptable standard if the predictive power of concepts were not arbitrarily limited to what is of value to scientists. For because western scientists are mainly interested in technological progress, they tend to ignore what is going on in other areas; still they feel entitled to call themselves scientists. It is one thing, however, to be humble in one's approach to the mysteries that surround us, and quite a different thing to shut one's eyes deliberately and deny that the mysteries are really there. No present biological theory can account for the reversal of physiological functions used in Hatha Yoga (evidence of which has been gathered quite scientifically), yet biologists do not hesitate to discard such data and still affirm that their models are complete and capable of prediction. Although no present theory accounts for the presence and the unique characteristics of living organisms and processes on this earth of ours, scientists move confidently about on it, pronouncing negative judgments upon concepts which disagree with their own, inadequate though these are to the facts. Again, there is no present theory which even begins to encompass all that we know of man through history and experience. No one knows, for example, exactly what the meaning of childhood is. Yet educators act as though they comprehend it completely, and psychologists proceed on the assumption that they understand a human being—even though they disagree among themselves, and adhere to different psychological schools from which they exclude each other's views.

The bias that has here been labelled the engineering mode of thought was at first mainly evident in the United States, but it is quickly taking possession of all minds in the West and is moving outside that natural area of growth. Practical results in applied science are claimed to be a justification of attitudes in science itself; knowledge that cannot be embodied in devices is called primitive; areas of experience that escape translation into blueprints and instruments are thought of either as liable of such translation one day, or as being unrealistic.

BUT fortunately not all thinkers are following this track. The man who realizes the limitations of any mode of thought, and is alert to the insidious interferences of one's own preferred mode with the set of experiences being studied, cannot but feel that another way of dealing with the matter might be more adequate and fruitful.

Two examples suggest that many modern dilemmas might be resolved if we could make ourselves more sensitive to other modes of thought and develop them explicitly, both individually and in groups.

The examination of education reveals that there are many components at work within it: social, personal, technical, epistemological, and so on. The trend is now to concentrate on one of these aspects, or even on a small facet thereof. By so doing we are far from considering the problem of education as a whole, and we cannot expect to find answers to any challenges except those of which we are already fully aware. But what of those educational challenges which are as yet unformulated?

To take a different instance, we have not sufficiently studied the history of knowledge from

the point of view of how to meet total situations in their complexity. Still, it is clear from what has been achieved thus far that true breakthroughs in any direction have been the result of syntheses rather than analyses. By flooding a complex situation with light from every direction we illuminate areas which a single beam of light could never reach. Too little effort, however, is put into learning to think in a complex way about complex things; too much effort is still devoted to splitting problems into minute factors that have little relation to the original, total challenge. Squadrons of research workers, applying the engineering mode of thought to improve modern laboratory techniques, can accomplish a great deal. But these methods have not been successful in meeting the challenges of education, except in those areas wherein engineering solutions are valid, such as conditioned reflex instruction and memorization. To work constructively on the problems that confront education as a whole, the mode of thought which I have termed *complex thinking* must be explicitly cultivated.

In order to understand children, we may need another mode of thought which I have elsewhere referred to as *multivalent thinking*. This term describes the process needed to meet the intellectual activity of children, who use, as a matter of course and for quite some years, the *suspended judgment approach*: they cannot be convinced until they find permanencies in the world around them.

MULTIVALENT thinking is a mode in which the mental structures that are being formed maintain their dynamic links, so that alterations can be brought in normally in the process of growth and of experience. In multivalent thinking, the classes of elements which form the content of thought are indeterminate in number and always operable via a new attribute. In order to learn to talk, children spontaneously adopt this kind of attitude, because words correspond to concepts whose extensions form classes and are met as such by children in the ambiguous environment. This is done naturally and without anxiety, and is rarely followed by a breakdown of the learning process, which would be the case if children labelled objects rigidly.

As we know, children in all cultures learn to speak the language of the environment, and sometimes more than one language, quite easily. My own experiments in teaching foreign languages and mathematics in various parts of the world have confirmed the fact that present concepts of education result in changing the natural multivalent mode of thought in children into rigid univalent cultural modes which exclude many possibilities of human thought and make these appear strange, curious, even unnatural. Because adults adhere to their own mode to the exclusion of any other, communication between people breaks down. Children are naturally free from such adherence to a mode of thought in which they are not as yet rigidly fixed, except insofar as it is formalized in the language they use. So the mode of thought of children may be the opening that will permit men to understand each other far better than through the medium of a common language which is artificially created or adapted from one of the highly elaborate languages that already exist. Success in maintaining a multivalent mode of thought in people as they become adult may also lead to a solution to the other problem mentioned above: the need for more people who can think in a complex way about complex things. In our highly perturbed societies, yet to become one humanity, this need is very acute.

We now know that thus far in our history we have barely lifted a corner of the veil of ignorance, barely opened a few windows upon the vast expanse of deeper experience. If we want to push forward the frontiers of our understanding and make full use of all the attempts mankind has made to understand its challenges, we must question our own mode of thought and see clearly what it includes as well as what it leaves out. Perhaps then we shall move more boldly in education, and give it the ability to look ahead while at the same time it makes use of what is true in our children's means of grasping a fluid environment.

Modes of thought form an area for research that would bring together anthropologists, psychologists, epistemologists, linguists and educators. In such an enterprise, each participant should be fully aware that our enlightenment depends upon his work, but also that far more light will be shed if more than one mode is alive and operative in him and in each of his co-workers.

THE SYMBOLIZATION OF MOTION

Richard H. Byrns

The Search for a Means to Express a Dynamic World View

A major problem in today's thinking is the difficulty in expressing continuous movement by means of a language that is structurally compartmentalized. That is, we attempt to symbolize concepts that are unified in a language that is divisive. For example, we may wish that we could fuse subject and verb into one term to indicate a single fluid motion, but our Indo-European subject-verb complex resolutely prevents us. It is as if we were forced to describe a flowing stream by using a number of separate blocks.

The problem becomes more acute as man's concept of his universe changes. The eighteenth century philosopher who viewed his world as a machine was more content with a linguistic structure that named the parts of the machine and indicated their relationships. To the mind that produced the formal garden, the closed couplet, and the balanced clause, a language that showed a symmetrical pattern was fairly adequate. The universe, it seemed, was governed by fixed laws that operated within set limits capable of being discovered by "reason" and thus understood. What could be more natural than a language that was composed of a number of separate units capable of being arranged according to plan?

However, in the nineteenth century, as it began to appear that matters could not be so neatly separated into tidy compartments, but were intermingled and, moreover, were shifting and changing, a linguistic structure that contained set limits became less satisfactory as a means of symbolization. And in the twentieth century, as dividing lines became still more blurred and man sought more and more for concepts that existed in all fields of knowledge, less and less did a rigid compartmentalized language seem adequate to explain the universe.

SIGNIFICANTLY, even within the limiting framework of the Indo-European language structure, our attention is turned more and more to movement. We try to interpret our universe in dynamic, not static terms, and thus are changing from what might be called a "noun-centered" culture to a "verb-centered" culture. We deal with changes, movements, and processes.

This is now characteristic of all fields. In literature, for example, no writer is thought of as a literary figure existing in an aesthetic vacuum, but as a member of a large-scale movement including perhaps politics and economics. Even single works of literature are not treated as separate units. It would be a rare critic who today would venture to discuss, say, James Joyce's *Ulysses* without considering psychology, sociology, philosophy, and mythology, as related parts of the literary stream. And it is indicative that John Ciardi's recent volume on poetry is not entitled *What is a Poem?* but *How Does a Poem Mean?*

Similarly, in painting, we find artists shifting from a static interpretation to a dynamic one. The progression has gone, for example, from a picture of a bird, to a bird captured at a moment of flight, to flying, to an abstraction of the motion of flight. Thus, in some instances, the artist is less interested in what his subject *is* than in what his subject *does;* and indeed, may try to abstract from a number of subjects the general concept of motion to the extent that the verb quality (the movement) is retained, but the noun quality (that which made the movement) is omitted entirely.

One of the important indications has been in education. To many, education can no longer be viewed as the acquisition of a body of knowledge, final and determined, but as a series of experiences, one leading into the next, with objectives set in terms of the individual's progress. The emphasis has changed from the material itself to the movement of the individual in relation to the material. Although it is not germane to this paper to discuss the merits of the change, it is obvious that the change itself arises from a society whose values are concerned with movement.

Significant also is that many modern grammarians look at language from the process point of view. Thus, they define the parts of speech not in terms of fixed meanings but in terms of function, a noun, for example, being a word that performs a certain function in a sentence. A word cannot be classified as something that *is,* apart from other words in a sentence; but can only be classified by what it *does* in relation to the entire process of the sentence. On the other hand, it must be remembered that the traditional grammarian also felt that he "looked at the language" and described what he saw. Without comparing the two points of viey, I suspect that if the approach of the modern grammarian seems more valid to us, it may be that we are members of a society to whom fluidity and movement are more vivid than are stability and fixed qualities.[1]

Obviously, if the thinking of the Western world

1. John C. Sherwood examines this point more in detail in his article "Dr. Kinsey and Professor Fries," *College English,* Feb., 1960.

is shifting emphasis from the noun to the verb, this shift should be apparent in the language itself. If we, within the Indo-European framework, are turning our attention to process and movement, then the change should be indicated linguistically.

To some extent, this seems to be happening. One of the most evident changes is the tendency to make nouns into verbs. Thus, following the accepted procedure seen in such words as "standardize," "ize" or a similar suffix is used to shift a noun concept to a verb concept. "He finalized the matter" may sound awkward, but it represents an attempt to bring together in a single verb form those elements which are separated in "he made the matter final," and in so doing, makes stronger the verbal quality of the sentence. And, of course, we use many nouns as verbs. "He structured a procedure," for example, places a heavier emphasis on the verb than does "he made a procedural structure," although both sentences would be objected to by the purists, as would the suffix "wise" in such expressions as "company-wise," "nation-wise," and the like. There appears to be no comparable tendency to turn verbs into nouns or to increase the noun quality of sentences.

Also, as Herdan[2] and others have remarked, the Indo-European languages have become increasingly monosyllabic, with English being one of the farthest advanced in the process of fusing together root words and flexions. Likewise, we fuse together whole words that symbolize concepts which were formerly separate. For example, we now speak of "time-space," instead of "time and space." Two hundred years ago, it would have been impossible to use the term "time-space" since that expression would bring together two distinct and quite individual concepts. To symbolize a third and quite new concept, we fused two existing forms, without, however, destroying the older "time and space."

The fact that the English sentence has become progressively shorter and thus more hurried is indicative. Movement, especially rapid movement, is expressed by short direct sentences; and the ponderous constructions of the eighteenth century are not suited to concepts that emphasize motion. Similarly, ellipsis, with its effect of abruptness, is more prevalent in the twentieth century than in the preceding ages.

YET, in spite of these changes in the language, the attempts to symbolize motion are incomplete and unsatisfactory. One reason is that the Western world is in a transitional state between its older, traditional, noun-centered culture and its present-day, changing verb-centered culture. We have not yet discarded the old, accepted the new, nor reconciled the one with the other.

But man's language represents his value system, which in turn arises from concepts produced by his knowledge of his position in the universe. That Western man has not satisfactorily symbolized his concepts indicates an incomplete understanding of the universe of which he is a member. An interpretation of the universe in accordance with the nature of things would give rise to concepts equally in accordance, which in turn would produce a symbolization structure that would be harmonious.

That such a lack of harmony exists in Western thinking is evident. As has been pointed out many times, a conflict arises from man's attempt to manipulate, at the same time, two contradictory sets of values: One, a set of absolute values, which states that certain truths are valid for all people in all times and places; and two, a set of relative values, which insists that truths are valid only so far as a particular society in a particular time and place accepts their validity.[3]

This conflict, with its resulting confused thinking, has been the subject for much concern in America. Such books as William Whyte's *The Organization Man* and Max Lerner's *America as a Civilization* emphasize the disorder that arises in a culture that is unable to formulate a definite philosophy of existence arising from a shared body of principles, and David Riesman's *The Lonely Crowd* presents a vivid picture of the noun-centered "inner-directed" man as contrasted with the verb-centered "other-directed" man. Significant, however, is Riesman's "autonomous man," who has discovered basic principles that can be used as guide for a more satisfying life.

It is apparent then, to symbolize motion, especially that kind of motion that is conceived of as a stream flowing through all of man's thinking and permeating all of his activities, including those derived from the past, it is necessary to discover the principles underlying such dynamism, to conceptualize such principles, and from such a body of concepts to formulate a symbolization structure. Such symbolization would fuse the static with the dynamic and would be based, not upon fragmentation, but upon totality, a totality that would reflect a conceptual unification.

ONE of the difficulties in searching for underlying principles and the resulting concepts and symbols is that our search is somewhat restricted by the Aristotelian structure of the Indo-European language. Henle sums up the difficulty in *Language, Thought, and Culture*:

"It should be noted . . . that in showing a connection between linguistic forms and metaphysics, we have not, of course, intended any implication concerning the truth of the rival systems. If Aristotle comes closer to the inherent SAE metaphysics than Bergson, it does not follow that he is more—or

2. G. Herdan, *Language as Choice and Chance*, Groningen: P. Noordhoff N.V., 1956, p. 187.

3. For example, contrast the attitudes of the missionaries and the anthropologists toward the Alaskan Eskimo.

less—likely to be correct. The fact . . . that a metaphysics may run counter to that typical of the language in which it is written shows, moreover, that metaphysical thought cannot be entirely linguistically conditioned.

"The contention . . . then . . . is that language is one of the factors influencing perception and the general organization of experience. This influence need not be primary or unique or compelling, but neither is it negligible."[4]

It is to be noted that, although we in the Western world can discuss metaphysics that are alien to the Indo-European language structure—an important first step—we still have to overcome the difficulty of assimilating such alien metaphysics into the Indo-European language structure or expanding the structure itself so as to include non-Aristotelian metaphysical systems.

Thus, although Korzybski took an immense step forward when he showed the need for a non-Aristotelian language pattern comparable to the non-Euclidean and the non-Newtonian in science and mathematics, because the formulation of his concepts had to be expressed within the Indo-European language structure, he was unable to achieve a clear symbolization of concepts which stemmed from a system of the universe that encompassed both the Aristotelian and the non-Aristotelian. Similarly, *within* the IE structure, Hayakawa and others have made great progress toward accuracy by their insistence on symbol systems and conceptual patterns that are definite and specific; and Carnap and other logical positivists have clarified Western thinking by indicating exact relationships. Yet it should be noted that the logical positivists expressed their patterns of relationships by means of formulae using the Indo-European subject-verb complex.

THERE are three possible areas that might be investigated in an attempt to determine principles by which the Indo-European language structure can be expanded or altered so as to symbolize more accurately the concept of motion.

1. The field of theoretical mathematics should prove a helpful one in this respect. Mathematics, on its highest level, is the most ideal of the various kinds of thinking that we, as yet, can use to determine a symbolization pattern that would include, in its expansion, Aristotelian and also non-Aristotelian concepts. Moreover, theoretical mathematics is, at present, the chief field that has developed principles that underlie both the objective and subjective areas of the thinking of mankind.

2. A more rigorous investigation should be made of symbolization systems other than those in the Indo-European structure to determine the concepts from which these systems derived and their basic principles. In this area, Chinese might prove to be the most helpful. For example, Chang Tung-Sun, in discussing the idea of substance in Western thinking and the resulting separation of subject and predicate, remarks, ". . . The separation between existence and whatness was the fundamental condition under which the concept of the substance was born. And this condition is expressed only in Western language structure."[5] Later, he makes a point which is especially pertinent to our difficulty in symbolizing motion because of the subject-predicate division: ". . . It is not essential for a Chinese sentence to have a subject. It is often understood. In a sentence like *hsueh erh shih hsi chih pu yi yueh hu* ('When we study and constantly review it, is it not pleasant?'), . . . the subject is eliminated. Examples of this kind are too numerous to mention."[6]

Likewise, as Benjamin Lee Whorf indicates in *Language, Thought and Reality,* the Hopi Indians do not need the Aristotelian categorizations to interpret their life experiences. Rather, their view of the universe is expressed through a symbol structure that emphasizes such matters as intensity or validity, and thus presents a much different picture of the world from the one given by means of the space and time oriented language of the Western culture.

3. A careful and systematic study should be made of those fields whose underlying principles are subjective and intuitive. Art may prove to be one of the most fruitful. A more complete understanding of the principles used by the artist who attempts to symbolize motion by means of what is essentially a static medium should give us insights that are applicable to other fields. In a sense, art is always an expansion of the thinking of mankind; and the distortions of shape, the whirling colors, and the tangle of lines used by the modern artist may be the first fumblings in the creation of deeper understandings arising from new ways of viewing the world.

Similarly, in searching for the principles underlying that portion of man's understanding where intuitive and subjective experiences are recognized, but as yet not linguistically formulated, it is important to recognize that the Indo-European framework presents us with a difficulty akin to that of the artist: the problem of symbolizing that which is dynamic in a medium which is static. At present, by its structure, our language emphasizes analysis, not synthesis; duality, not oneness; division and separation, not completeness and unity. The basic objective of this aspect of the investigation would be the attempt to make a conceptual breakthrough which would lead to the expansion of our symbolization structure so that the language structure of the Western world would be more in accordance with the basic principles of the universe.

4. Paul Henle, *Language, Thought, and Culture,* Ann Arbor: University of Michigan, 1958, p. 18.

5. Chang Tung-Sun, "A Chinese Philosopher's Theory of Knowledge," in *Our Language and Our World,* S.I. Hayakawa, ed., New York: Harper, 1959, p. 307.

6. Tung-Sun, *loc. cit.*

NEWS AND NOTES

THE following review briefly covers the major points made by the author during a visit to universities and other institutions of higher learning in India between December 1960 and February 1961. The initial opportunity came as an invitation from the Secretary of the Indian Philosophical Congress, Dr. N. A. Nikam, Vice-Chancellor of Mysore University. The President of the Congress, Dr. Humayun Kabir, is also President of the Indian Council for Cultural Relations (as well as Union Minister for Scientific Research and Cultural Affairs), and thus made it possible to include in the itinerary the annual meeting of the Indian Science Congress, and addresses to public meetings in Madras, Calcutta, Bombay and Delhi. The visit was finally expanded and consolidated by the generous support and management afforded by the India International Center, a new development in Indian cultural affairs.

Physically the Center is a group of handsome new buildings in the Lodi Estate region of New Delhi. The President of the Center is Dr. C. D. Deshmukh, its Secretary, Dr. H. C. Gupta. The governing Council includes other distinguished names in Indian governmental, educational and cultural affairs, who see the need for research and development on the frontier of knowledge.

Not only did the Center provide management and a base for operations; by its very nature it can sustain whatever results of this visit may prove to have value. The active and effective collaboration of all the above-named is gratefully acknowledged.

In response to the invitations from India, the Council of the Foundation for Integrative Education allocated a sum for international travel from its grant-in-aid from the Rebekah West Harkness Fund of the W. H. Harkness Foundation. It was the view of the Council that collaboration with its research program might be successfully sought by the writer. The purpose of the visit was to try to describe that part of the research program of the Foundation for Integrative Education which is intended to result in visual teaching aids and materials suited to giving an integral center to curricula in higher education.

What is here reviewed was put before the Indian Philosophical Congress, the Indian Science Congress, the Inter-University Board of India, and the faculty and senior students of the following universities: Mysore, Madras, Andhra, Aligarh, Benares, Jadavpur, Patna, Bombay, Poona, Dharwar, Marathwada, and Delhi. The cordiality and hospitality of the Vice-Chancellors and other officers of these institutions were heartening, and the invitations to return give hope that continued cooperation is likely. Strong interest has also been shown by men and women in appropriate Ministries, and other leading personages in Indian life.

Disintegration in the West

AT the end of the 18th Century, higher education in the West and in countries under Western domination was still fairly integral, being influenced by classical European philosophy. It afforded a relatively simple body of empirical science which, insofar as it was of philosophical import, only strengthened the convictions of cultivated men that nature was orderly in her fundamental processes, and individual human life was somehow meaningful. In those days only a few received higher education and they, like other men, were still near to nature, since life was agrarian and pastoral.

By the end of the 19th Century the integrity provided by classical education was shattered. The inherited philosophical meaning had been gradually eroded, as empirical science—now largely of the mechanistic, materialistic, neo-Darwinian kind—supplanted the old idealistic naturalism. Life in large cities, where the social, political and economic forces were beginning to be concentrated, led to the conversion of the schools into instruments of industrialism. Value-laden philosophy as an integral force in education, especially in the new secular school systems, withered away. At the end of the century something called liberal education began to take shape, but such consistency as prompted it was a brittle eclecticism.

In the 20th Century, mass production, vast armies, tremendous proliferation of technologies, air travel, electrification, acceleration of communications, war, and all the rest of the physical and psychic pressures on mankind finally defeated liberal education. By about 1940 a last stand was made in behalf of integrity and insight in schools and colleges. The program of general education was practical and prompted by human motives. It aimed to restore idealism, breadth and balance to education. In shaping up general education it proved impossible, however, to sustain, restore or formulate anew the needed consistency, since a philosophy of real meaningfulness and adequate authority seemed to be unobtainable. Physicalism, violence and confusion had triumphed over reason.

In retrospect, however, it is clear that re-union of science with the cultural heritage would then have been possible. For the fact is that the shallow philosophy of science which, in the 19th Century, had ousted classical integrated education from the schools and thus started the retreat from reason which became a rout under the pressures of technology and war, had actually no longer status as a philosophy even of science, let alone of nature and of man.

The reasons why this basic fact was neglected when general education was being formulated are

today clear. There is always a lag between the physical developments of science and deliverance of the meaning of those developments into the educational system. The events which put an end to the claims of materialism and mechanism to be a valid philosophy were, moreover, not simply another evolutionary unfoldment of science, but a revolutionary challenge. A valid, authoritative metaphysics had arisen from physics itself. The evidence that it has come to stay is diversified. The successful preparation of the aids needed to present this evidence properly will make it possible to provide teachers with the new meanings.

Obstacles to immediate use of the philosophy of the new science introduced an unfortunate delay. The metamorphosis of physics, begun with Newton, made effective in 1873 and formulated by 1923, brings science into agreement with classical European learning, especially that tradition in which Pythagoras is the earliest great name and Plotinus almost the last. But by 1923 the classical integrity of education had long been shattered. Such respectful references to the science of the ancients as were then made were usually concentrated on Aristotle, whereas the new science recalls Plato to our respect.

Thus it happened that just when the schools needed to restore integrity to knowledge, the reintegration of the sciences with the classical heritage was possible but classicism was itself quite out of fashion. Furthermore, the meaning of the new physics was debatable even among the physicists who were technically highly competent in their profession. Thus the opportunity to give depth as well as breadth and balance to education was not taken.

Here we are not concerned mainly with the West, except as its education, its technology and its climate of thought have bearing on matters Indian. But the reader of this review might well examine *Nature and the Greeks,* by the late Erwin Schroedinger (Cambridge Univ. Press, 1954). There he will see one of the greatest creative talents in modern physics turn finally to Pythagoras, Parmenides, Heraclitus, Democritus and Plato. These men, and later on Ammonius Saccas, his pupil Plotinus, and a few others, were the thinkers who more than any others made European classical integral education intellectually possible, and kept it vital through the 18th Century. Although Professor Schroedinger does not refer specifically to India in this book, it nevertheless shows the power of Indian philosophy, for the Greek fragments which are quoted can be seen to be parts of a consistent body of thought that is still available in the Indian *darsansas.* Indian thought is represented more fully in another pregnant little book, *The World as Power Reality* (Ganesh & Co., Madras, 1921). Its author, Sir John Woodroffe, was not a physicist, yet so durable is the essence of Indian philosophy that the books is really quite as much contemporary science as it is classical Hinduism.

The reader of this review will understand that the proposed research and development of teaching materials is intended to draw upon the sciences. The aim is to assemble not only the content of all departments of knowledge but to understand the knowing process. An artificial revival of classicism is not the purpose. Nevertheless it cannot be ignored that there have been men in antiquity whose insight into nature, man and the universe was superior to the ordinary speculative philosophy recently current in the West.

The doubt about the value of the classics which prevails in the West is in large part a consequence of that very science which, up to the beginning of this century, seemed so certain and final. The systems which came to us from Plato and others, and to the Indians from Gautama Buddha, the Adi Shankaracharya and others, depend for their acceptance upon many propositions about the human potential and the actual character of nature which mechanism could not possibly furnish. The situation has now radically changed in respect to nature. Major ideas, especially those in Indian classicism, have actually been documented. Hence a new question must be seriously asked: How did the ancients, without our techniques, arrive at the same basic ideas which we have developed through practical methods and can now demonstrate to be true?

This is not the moment to say much on this point, but one consideration may be mentioned. Gautama Buddha (to take the best known example) said plainly and repeatedly that reliable knowledge came from laboratory practice. As the principal object of study then was man, it followed that each person was his own laboratory; the prescription was to be lived out. The realism, then, was richest in respect to man. The Buddha said (and the Yoga sustains this statement) that a person wholly self-disciplined in the manner he demonstrated would come to know ultimates *by being them.* It is important to note that what is involved here is not a religion professed, but a consistent system practised.

Europe has produced her saints and mystics. But the needs of present-day education are for a consistent, realistic body of knowledge and self-knowledge, not for the few but for the many, leading to a way of life. Therefore juncture with the classics should and will be made. Such research will result, among other gains, in achieving better criteria for the uses of the past in West and East alike.

As to India—

IN what follows it will be assumed that the Indian reader is familiar with the central features of his cultural heritage, namely, the *darsanas,* but not, of course, with authoritative knowledge of all branches of science. It will be further assumed that readers understand the difference

between a pure science, such as geometry—which is simply a mosaic of completely rational systems not required to have empirical justification—and those sciences which prove that we can not only understand but even control nature. Obviously such understanding and control are made possible by reason of our elevation over nature.

It will not be assumed, however, that the reader is clear on the difference between (1) deductive-exact empirically justified science, and (2) all the rest of that valuable cultural discipline. It will therefore be necessary to discuss this difference at a later stage. For the program which is about to be described turns upon that difference. In fact, the first stage of the research discussed will need to be a careful study of the epistemology, the conceptual content, and the total significance of this body of science, the object being to demonstrate that this particular scientific method is, by its very nature, metaphysical and philosophical, and that it has, in fact and in consequence, given us indisputable detailed knowledge of supersensory and non-material domains in nature.

Indian philosophy, like Greek idealism (but far more richly and consistently), has expounded not only the reality but the singular and causal status of the supersensory and the non-material. It should therefore be immediately evident that for Indian education the providing of a thorough knowledge of the method, the conceptual content and philosophical significance of deductive-exact science is truly imperative if education is to restore in the student interest and intellectual confidence in his own cultural heritage.

At no stage of this review will there be tolerance of the natural impulse to distort the new meanings of this science to fit Indian or any other philosophy. In fact it will be shown that such cavalier treatment of this science is quite needless. So far in its advance, it is identical with that part of Indian philosophy (i.e. the *Vaishesika*) which treats the same aspect of nature as does physics, namely, matter and energy. It is merely proposed that the new physics be studied, not only in itself, but in terms of the Indian heritage. It will then be clear *prima facie* that the re-integration of knowledge can now be worked out, and put to use as the philosophy of education here in India. The world-wide status of this development will concern us later.

We are here considering, then, the practical program which will make available the needed teaching material, drawn out by technical experts from the sciences, and by Indian classical experts (including pandits) from the *darsanas*. That production program begins with two commitments:

1. Specific research into the philosophy of nature, which will lead to
2. The preparation of materials required for teaching the method, the conceptual content, the philosophical bearings, and the knowing process employed in contemporary science.

The start is to be made with the deductive-exact method and findings, but the program is not to end there. Eventually all valid data and authoritative knowledge of nature's meaningfulness is to be assembled, to be experienced, and to be elucidated, so that a consensus will be evoked.

There are also major scientific and philosophical considerations:

1. The transformation which has reduced mechanism as a philosophy to mechanics as a department of physics has come about through the successful development of a unique *kind* of empirically justified science. This form of science has an epistemology of its own which constitutes it a form of metaphysics, so it is at once an authoritative form of science and of the metaphysics of nature.
2. The conceptual findings of this type of physics can be, and for educational uses must be, articulated. They will then be found to document the corresponding part of the *darsanas,* namely, the *Vaishesika* as a physical theory. (The *Vaishesika,* of course, goes beyond present physics.)
3. But the total force of the new meanings is also to be assessed. The new physics demonstrates the reality of supersensory and non-material domains, styled force fields. Force fields are aspects of that background of nature called the Continuum; they are today constantly employed in orbitting artificial satellites, exchanging signals with them, and dissolving matter into energy and residues.

Thus we have two different but inter-connected aspects of nature, namely, the discrete objects and creatures in the foreground, and the Continuum, which is to some extent revealed by the existence, the properties and the behavior of sensed objects. In short, there is the phenomenal sensed world and the noumenal real world, precisely as the best of the Greeks and the Hindus realized.

What is more, physics has already established the reality not only of force fields but of metric fields. Thus the breach between physical science and ethical and moral systems begins to close. We are at last arriving at a position in which it will be possible to show that physical nature, in its self-orgaizing creatures, tends to approximate to and reveal ideal systems. The significance of this can hardly be exaggerated. It means that instead of relying upon aspirational ideals alone we may presently find that the universe has, for man, ideal norms which he can discover and live out, just as it has, for nature's lower orders, patterns which are progressively revealed in evolution. One such system of natural ideals and physical approximations will be briefly exemplified in this review.

If, then, our philosophy of nature and of man is to be correctly modernized, the relationship of the

sensed and supersensory domains of nature calls for re-study. The discrete objects and creatures of the world are to be examined as consequences and expressions of properties of the Continuum. Processes of visible nature depend upon unseen reality. This state of affairs obtains even in the case of what seem to be simple physical interactions. Contact forces do not proceed independently of field forces, even in mechanics, for after all the physical structures involved are what they are because of the force fields which they, in varying ways and degrees, embody and obey.

This being the case with practically rigid bodes, how much truer it must be of the semi-fluid processes of living creatures.

4. Items 1 to 3 above, taken in their entirety, re-establish the fundamental position of the *Vaishesika* and potentially encourage confidence in the realism of other *darsanas*. Thus in the first stage of this research and production program the demonstration of the unity of science and the cultural heritage will have begun.

But it is desirable to point out that both the physics and the philosophy teachers may expect to benefit, each in his own specialty. For certainly it will be valuable to professors and students of physics to have mastery of scientific method, to be acquainted with the whole body of natural orders, and to be conversant with the essentials of the new knowledge of the-Continuum. Physics today having become metaphysics, every student will be the better scientist (something more difficult than to be a technician) if he be also a good philosopher. Similarly, professors of philosophy will be in a position to endow Indian philosophy, ethics, aesthetics and social thought with a new authority.

We shall presently see that this central program will give an importance and a direction to all the major arts, as well, and that the study of human society and even political and economic subjects will be enriched. Certainly, the provision of a meaningful consensus in which the human heritage is once more prized will unite and fire the Indian student body in a way and to a degree not effected by the physical and economic goals which they so properly and necessarily prize.

The one-world aspect of these proposals surely needs no more than simple mention. Science being the conceptual coin of the world and its most coercive force, scientific meanings can alone serve to *begin* to re-unite the minds of mankind.

—F. L. Kunz

The second part of this review will appear in the May-June issue.

REVIEWS

The Philosophical Perspectives of Modern Science

WHETHER or not there are actually "two cultures" in the Western world, as Sir Charles Snow argues, is in part a matter of opinion and in larger part a matter of definition. It is certain that at present there are two different attitudes of mind among men of intelligence and learning concerning the nature of the world and of man. One is displayed by the majority of physical scientists; the other by the majority of humanists and theologians. Thoughtful and informed adherents to any of the great religious faiths that influence so profoundly the life of man cannot help but be confused or disturbed by the tensions thus produced. Basically the cleavage is in the realm of philosophy. And it is there that integration should be sought.

In his latest book, Henry Margenau presents the philosophical perspectives of modern science in terms that may be readily comprehended by those not specifically trained in the physical sciences, and provides an excellent starting point for the healing of the rift. The title of the book, *Open Vistas* (Yale University Press, New Haven, Conn., 1961, x+ 256 pp., index,$5.00), is altogether appropriate and highly intriguing. When the thesis it implies is accepted, his readers will inevitably be engaged in richly rewarding adventures of the mind.

Professor Margenau's ideas concerning the decline of materialism in scientific thought and the decay of mechanistic materialism as a philosophy of the recent past are already widely known as a result of his numerous writings and even more numerous public addresses. Here he reviews with great clarity the revolution in conceptual thinking about the nature of matter and weaves a coherent pattern of relationship between postulates and constructs, facts and theories. The emphasis is shifted from technical science to the philosophic problems surrounding and pervading science.

Thus, for example, he asserts that "basic assumptions are called ideals or norms in ethics, faith in religion; in science they go by the prosaic name of postulates or axioms. When analyzed logically, the scientific equivalent of the act of dedication to ideals in ethics, of the act of faith in religion, is the tentative yet wholehearted acceptance of basic postulates at the very beginning of the scientist's quest." When scientists, humanists and religionists recognize the cogency of that equivalence, the way is opened for an integration of their activities far transcending mere cooperation in their tasks.

But when they do so, they must all take a forward step together. Professor Margenau describes it clearly: "I can conceive of nothing surer than a tried scientific postulate, or indeed an ideal that lights my way, or a fervent religious conviction. True, the certainty

of all these grows with effective use; they start as tentative maxims and finally, in a mature and integrated personality, they attain unconditional power over thought and action. Ultimate, absolute and therefore static knowledge is never necessary in settling human affairs."

Dealing succinctly, authoritatively and persuasively with another of the basic issues of our day, Professor Margenau asserts that "physical science would lose its hold on reality if an appeal to law and order were interdicted as a major claim." To be sure, regularity of action in the subatomic realm "is found primarily in aggregates, or, when assigned back to individual events, in the *probabilities* which inhere in these events. Laws govern these probabilities; they do not govern single occurrences. To be in harmony with the spirit of physical science we must therefore accept a conclusion unpalatable to many thinkers of the past, the conclusion that *probabilities are endowed with a measure of reality.*" Considering what this means, he advocates again, as he had done before in his 1950 book, *The Nature of Physical Reality,* the recognition of a distinction between *physical* and *historical* reality.

This significant point is spelled out in considerable detail and with great cogency. It is increasingly important as he proceeds to a perceptive consideration of the paradoxical relations between determinism and human freedom and to the search for a common denominator of science, ethics and religion. Even as "incoherent facts are unified by science into a consistent whole with the use of reason," so "the success of religion is measured by the degree of rational coherence which it bestows upon [the] singular religious experiences that assail the sensitive mortal."

I am well aware that limitations of space make it impossible to do justice to all the stimulating ideas with which this book is replete. I trust, however, that I have said enough to indicate its great value and to suggest its fine flavor. Henry Margenau has once more blazed a trail that should be eagerly traversed by everyone who recognizes the intellectual and moral confusion of our time and yearns to find the way to a more orderly and more righteous community of mankind that would be in harmony with the marching orders of the universe.

—Kirtley F. Mather

The Psyche as Organ of Religious Experience

IN *The Intelligent Agnostic's Introduction to Christianity* (Skeffington, London, 1959, 248 pp., index, 21s.), Eugene Rolfe presents us with a new word, "crintellect," which he defines as "the critical intellect in its negative aspect of cruel blind destructive power." While his own intellect is penetratingly and forcefully expressed, it never loses the vital spontaneity of the natural, emotionally mature, feeling human being.

Rolfe first puts metaphysics on one side remaining, as he says, "in invincible agnosticism about it," and proceeds to investigate the spiritual "as a kingdom sovereign in its own right." As the appropriate discipline for his investigation of this aspect of the human being, he uses the findings of depth psychology, as it reveals the historical development of the spirit expressed in the Judeo-Christian heritage. For this task he accepts the human psyche in its entirety as the specific organ of religious experience.

As a preliminary he clears the atmosphere of some of the moralistic significance of God such as "is He all-powerful, is He all-good," thus appealing to the genuine agnostics "whose minds are sincerely open for the emergence of a new reconciling truth." He proceeds, with most vivid descriptions of our present-day behaviors and customs, to clear the image of God from its moralistic incrustations, opening the way for the "ego's free obedience to the indwelling law and entelechy of the psyche."

For the positive investigation of the new look at God and the spiritual life, he draws upon the insights gained in depth psychology, linking them with the creative inspirations of the prophets and poets of our Western heritage. Basic to his thesis is the acceptance of the central insight of the experience of totality which we have in our inmost selves and which corresponds to the ultimate essence of all things. "But," he adds, "we are today living so far away from the unseen center of our being that we have forgotten our kinship with the nature of all things." Facing this dilemma, "the *sine qua non* for overcoming it is to give systematic attention to the unconscious, to discard pride and its cloak of self-deception and look at the poor little naked ego . . . then humility will no longer involve ultimate humiliation and the human being can see the larger structure, meaning and design."

Here are encountered the true living symbols by which man has lived. As he says, "Symbols are as necessary to the life of the soul as genitals are to the life of the body." It is important that we follow the basic symbols in their primal form and not those aberrations distorted by the "crintellect." In his search for God, he then takes the reader to the dynamics of the passion and resurrection of Jesus—the Eucharist as the fundamental living symbol in Christianity. To show its psychological validity for modern man, he traces its historical development. But first he points up what has happened to most human beings: "We have concentrated so entirely on the plain fact that in this life of ours there are duties to be performed and a job of work to be done, that we have simply overlooked the interior reality. . . . The sad truth has to be faced that we do not really believe any longer in the possibility of spiritual transformation."

A most illuminating backdrop from the scriptures is then shown, revealing the symbol of redemption and atonement from the blind darkness of compulsive unconsciousness in human sacrifice, to the symbolic offering of an animal by Abraham, to the voluntary offering by Jesus of himself. "Before Abraham was, I am." "I am in the Father and the Father in me." Through sacrifice of blood and body the spiritual is redeemed. Man is restored to wholeness and there God dwells.

This final paragraph is Rolfe's approach:

"It need hardly be said that the whole self includes the intelligence and the greatest possible intellectual freedom. The only demand we are entitled to make as the way in which we should use our intelligence is that it should be used to save life and not to destroy it."

—Martha Jaeger